

Exercises for Day 32

Exercise 1. Plot the function $y = 1 - x^2$ for values of x from 0 to 2 by steps of 0.1. Using a tolerance of 0.01 with a `for` loop, find the x value at which the function is closest to 0.5. Add a circle marker at that point on the curve. Give the plot good labels, a legend, and a title.

Exercise 2. Plot the function $y_1 = 1 - x^2$ for values of x from 0 to 2 by steps of 0.001. Plot the function $y_2 = x$ for values of x from 0 to 2 by steps of 0.001 on the same axes. Using a tolerance of 1.0e-04 with a `for` loop, find where the two curves intersect. Add a circle marker at that point. Give the plot good labels, a legend, and a title.

Exercise 3. Repeat Exercise 2, but this time use the `find` command instead of a `for` loop.

Exercise 4. Plot the function $y = 1 + x - x^2$ for values of x from 0 to 2 by steps of 0.001. Find the maximum value of the curve and its x -value, and add a circle marker at that point. Give the plot good labels, a legend, and a title.